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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,870	11/19/2003	Kevin S. Beyer	SVL920030087US1	9345

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EXAMINER
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EBIRIM, EMEKA

ART UNIT	PAPER NUMBER
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2166

DATE MAILED: 06/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/717,870	<b>Applicant(s)</b> BEYER ET AL.	
	<b>Examiner</b> Emeka Ebirim	<b>Art Unit</b> 2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 9-11, 16-20 and 25-27 is/are rejected.
- 7) ☒ Claim(s) 6-8, 12-15, 21-24 and 28-31 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/19/2003</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Status***

1. Claims 1 – 31 are pending in this Office action.

The application has been examined. Claims 1-5, 9-11, 16-20, 25-27 are rejected.

Claims 6-8, 12-15, 21-23, 24, 28-31 are objected to as detailed below and are pending in this office action.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1 recites the limitation "the output" in line 4. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. To be statutory, a claimed computer-related process must either: (A) result in a physical transformation outside the computer for which a practical application is either disclosed in the specification or would have been known to a skilled artisan, or (B) be limited to a practical application with useful, concrete and tangible result.

Claims 18 – 24 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

These claims appear to constitute solely software per se and/or appear to constitute solely an abstract idea without any practical application. These claims do not indicate use of hardware on which the software runs to perform the steps recited in the body of the claim. The program does not appear to have been stored in a tangible storage medium therefore it is program per se. Software or program can be stored on a medium and/or executed by a computer.

In other words the software must be stored in a tangible medium. As such, these claims are not limited to statutory subject matter and are therefore non-statutory.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-3, 17-18, 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Pub No: 2005/0004892 to Brundage et al (hereinafter '4892).

#### **Claim 1.**

'4892 discloses:

An XML query rewrite method processing an XML query, the XML query rewrite method comprising [XML query, rewrite, Paragraph 0112]:

identifying an expression of the XML query that receives an expression input [XML input query, Paragraph 0037];

determining whether a set of items defined by the output of the expression is independent of grouping of items in the expression input [re-ordering will have no effect on subexpression, paragraph 0049]; and

transforming the expression input into a transformed data stream input, the transforming being conditioned upon the set of items defined by the output of the expression being independent of grouping of items in the expression input [resultant rewrite may be inserted into the query; transformation, paragraph 124, 125, 128].

#### Claim 2.

'4892 discloses the elements of claim 1 as above and furthermore it discloses conditioning the transforming on each of a plurality of consumers of the output of the expression receiving a data stream in which each element of the data stream is a single XML item [XML queries, conversion, single pass, paragraph 0063, 0064].

#### Claim 3.

'4892 discloses the elements of claim 2 as above and furthermore it discloses conditioning the transforming on the expression input not being received by any other expression [input query transformed, paragraph 0038, 0071, 0072].

Claim 17.

'4892 discloses the elements of claim 1 as above and furthermore it discloses further conditioning the transforming on partitioning of the expression output having no effect on any consumer of the expression output resultant rewrite may be inserted into the query; transformation, paragraph 124, 125, 128].

Claim 18.

'4892 discloses;

An XML query compilation processor comprising:

an execution compiler transforming an XML query into an executable XML query plan [compile, execution, XML, query, See '4892 paragraph 0077]; and

a query rewrite processor performing query transformations on the XML query, said query transformations including transforming an expression input received by an expression that produces an output stream of individual XML items conditional upon a set of items defined by the output stream of individual XML items being independent of grouping of items in the expression input [resultant rewrite may be inserted into the query; transformation, paragraph 124, 125, 128].

Claim 20.

"4892 discloses the elements of claim 18 as above and furthermore it discloses:

a data flow model processor converting the XML query into a data flow model, the query rewrite processor performing the query transformations on the data flow model, the execution compiler transforming the data flow model into the executable XML query plan subsequent to the query rewrite processor performing the query transformations [transformation, rewrite, 0117, 0120, 0124].

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 4-5, 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over '4892 in view of Pub No 2004/0267760 to Brundage et al (hereinafter '7760).

Claim 4.

'4892 discloses the elements of claim 1 as above and furthermore it discloses, wherein the identifying of an expression of the XML query that receives an expression input comprises [XML input query, Paragraph 0037]:

identifying an expression of the XML query that receives a sequence of concatenated XML items [paragraph 0124].

'4892 discloses the elements of claim 1 as above but it does not explicitly indicate "sequence of concatenated". '7760 discloses the claimed sequence of concatenated [sequence concatenation, paragraph 010].

It would have been obvious to one of ordinary skill in the art of data processing to combine the cited reference because the disclosures of '7760 would have enabled '4892 to unify representations to implement virtual XML for XML queries and views over XML and non XML data sources ['7760 paragraph 0013].

Furthermore it will enable '4892 to implement queries over complex mappings into less complex problems of composing queries and performing them over less complex mappings ['7760 paragraph 0013].

#### Claim 5.

The combination of '4892 and '7760 discloses the elements of claim 4 as above and furthermore they disclose wherein the XML query is an XQuery, the sequence of concatenated XML items is produced by an XQuery LET clause, and the transforming of the sequence of concatenated XML items into a transformed data stream input comprises [XML query, Query, FOR, LET, sequence concatenation, See '7760 paragraphs 0049, 0101, 0111]:

transforming the sequence of concatenated XML items into a data stream of individual XML items having a format corresponding to an XQuery FOR clause [XML query, XQuery, FOR, LET, sequence concatenation, See '7760 paragraphs, 0049, 0101, 0111, 0126].



Claim 9.

The combination of '4892 and '7760 discloses the elements of claim 4 as above and furthermore they disclose

determining a duplication property that is true if each item contained in the input sequence input to the expression produces unique output items in the output of the expression [duplicate value, sequence, See '7760 paragraph 0111]; and

determining an ordering dependence property that is true if an ordering of items in the sequence of concatenated XML items induces a corresponding ordering of items in the output of the expression that adheres to a selected order [RANGE, sequence, decreasing, See '7760 paragraph 0112];

wherein the transforming is further conditioned upon the duplication property being true and upon the ordering dependence property being true [duplicate value, sequence, decreasing, true, See '7760 paragraph 0112, 0113, 0114].

Claim 10.

The combination of '4892 and '7760 discloses the elements of claim 4 as above and furthermore they disclose:

determining a duplication property that is true if each item contained in the input sequence input to the expression produces unique output items in the output of the

expression [duplicate value, sequence, decreasing, true, See '7760 paragraph 0112, 0113, 0114, 0115];

conditional upon the duplication property being false, inserting an intermediate operation in the XML query that removes duplicate items in the output of the expression [duplicate value, sequence, decreasing, false, See '7760 paragraph 0112, 0113, 0114, 0108]; and

performing another query rewrite operation enabled by at least one of the transforming and the inserting [See '7760 paragraph 0215].

Claim 11.

The combination of '4892 and '7760 discloses the elements of claim 4 as above and furthermore they disclose:

determining an ordering dependence property that is true if an ordering of items in the sequence of concatenated XML items induces a corresponding ordering of items in the output of the expression that adheres to a selected order [RANGE, sequence, decreasing, See '7760 paragraph 0112];

conditional upon the ordering dependence property being false, inserting an intermediate operation in the XML query that sorts items in the output of the expression to produce a selected ordering of items in the output of the expression [duplicate value, sequence, decreasing, false, See '7760 paragraph 0112, 0113, 0114, 0108]; and

performing another query rewrite operation enabled by at least one of the transforming and the inserting [See '7760 paragraph 0215].

10. Claim 16, 19, 25 – 27 rejected under 35 U.S.C. 103(a) as being unpatentable over '4892 in view of Pub No 2004/0225643 to Alpha et al (hereinafter Alpha).

Claim 16.

'4892 discloses the elements to claim 1 as above furthermore it discloses:

subsequent to the transforming, applying the XML query to a sequence of XML items selected from a group consisting of [sequence '4892 paragraph 0124]:

a sequence of XML items extracted from one or more extensible markup language (XML) documents [XML '4892 paragraph 0073],

a sequence of XML items supplied by an Internet service [Internet, paragraph 0061],

a sequence of HTML items extracted from one or more hypertext markup language (HTML) documents [data sources, Fig 2 0073], and

a sequence of HTML items supplied by an Internet service [data sources, Internet, paragraph 0061, Fig 2 0073].

'4892 discloses the elements of claim 16 as above but it does not explicitly indicate "HTML". Alpha discloses the claim "HTML" [paragraph 0032].

It would have been obvious to one of ordinary skill in the art of data processing to have combined the cited references because "HTML" as disclosed by Alpha would have served to provide improved mechanism for servicing information searches.

Furthermore it would enable '4892 to provide more control to an end user that is requesting a search for particular information in a more efficient manner [Alpha paragraph 0008]

Claim 19.

"4892 discloses the elements of claim 18 as above and furthermore it discloses a parser receiving the XML query as a textual XML query and producing a parsed XML query, the query rewrite processor operating on one of the parsed XML query and the executable XML query plan [resultant rewrite may be inserted into the query; transformation, paragraph 124, 125, 128].

'4892 discloses the elements of claim 19 as above but it does not explicitly indicate "parser". Alpha discloses the claimed "parser" [parsing the query; constructing a query execution plan, Alpha paragraph 0006].

It would have been obvious to one of ordinary skill in the art of data processing to have combined the cited references because "parser" as disclosed by Alpha would have served to enable '4892 provide improved mechanism for servicing information searches.

Furthermore it would enable '4892 to provide more control to an end user that is requesting a search for particular information in a more efficient manner [Alpha paragraph 0008]

Claim 25.

'4892 discloses:

An article of manufacture including a program storage medium encoding instructions executable by an associated computer, said instructions embodying a query rewrite method comprising [instruction, transformation, rewrite, 0117, 0120, 0124,0167]:

identifying an expression of an XML query having an input data stream grouped by a first quantifier and an output data stream grouped by a FOR quantifier ['4892 paragraph 0124];

computing at least one evaluation property based at least on the expression and the first quantifier [evaluate '4892 paragraph 0063]; and

performing a selected quantifier transformation conditional upon the computed evaluation property [transformation, rewrite, 0117, 0120, 0124,0167].

'4892 discloses the elements of claim 25 as above but it does not explicitly indicate "FOR quantifier". Alpha discloses the claim FOR quantifier [Alpha paragraph 0101].

It would have been obvious to one of ordinary skill in the art of data processing to have combined the cited references because "FOR quantifier " as disclosed by Alpha would have served to enable '4892 provide improved mechanism for servicing information searches.

Furthermore it would enable '4892 to provide more control to an end user that is requesting a search for particular information in a more efficient manner [Alpha paragraph 0008]

Claim 26.

The combination of '4892 and Alpha discloses the elements of claim 25 as above and furthermore it discloses, wherein the first quantifier corresponds to a sequence constructor and the performing of a selected quantifier transformation comprises [transformation, rewrite, See Alpha paragraph 0117, 0120, 0124,0167]:

replacing the first quantifier by a second quantifier, the second quantifier producing a data stream of individual XML items [resultant, inserted, transformation, rewrite, See Alpha paragraph 0124, 0125].

Claim 27.

The combination of '4892 and Alpha discloses the elements of claim 25 as above and furthermore it discloses wherein the performing of the selected quantifier transformation comprises: removing the first quantifier [eliminate, See '4892 paragraph 0124].

***Allowable Subject Matter***

11. Claims 6-8, 12-15, 21-23, 24, 28-31 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emeka Ebirim whose telephone number is 571-272-3994. The examiner can normally be reached on 8:30pm - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam, can be reached on 571-272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Emeka Ebirim  
Examiner  
Art Unit 2166

May 26, 2006



**HOSAIN ALAM**  
SUPERVISORY PATENT EXAMINER